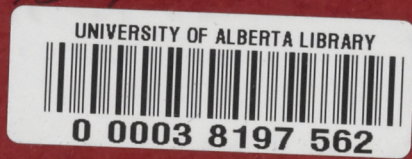


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ANNUAL REPORT

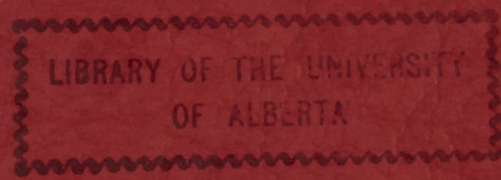
OF THE

ONE WEEK LOAN

GENERAL SCIENCE

EASTERN ROCKIES FOREST
CONSERVATION BOARD

FOR THE
FISCAL YEAR
1950 - 51



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CALGARY, ALBERTA
31st MARCH, 1951

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ANNUAL REPORT

of the

EASTERN ROCKIES FOREST CONSERVATION BOARD

Minister of Resources and Development,
OTTAWA, ONTARIO.

for the

Sir:

I have the honour to submit herewith the
Annual Report of the Eastern Rockies Forest Conservation
Board for the fiscal period 1st April 1950 - 31st March 1951,
pursuant to the provisions of the Eastern Rocky Mountain
Forest Conservation Act of 1947. I am

FISCAL YEAR

1950-51

Your obedient servant,

G. Tunstall,
Acting Chairman.

Calgary, Alberta,
26th June 1951.

Calgary, Alberta

31st March 1951

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EASTERN ROCKIES FOREST CONSERVATION BOARD

To

The Honourable R. H. Winters,
Minister of Resources and Development,
OTTAWA, ONTARIO.

Sir:

I have the honour to submit herewith the Annual Report of the Eastern Rockies Forest Conservation Board for the fiscal period 1st April 1950 - 31st March 1951, pursuant to the provisions of the Eastern Rocky Mountain Forest Conservation Act of 1947. I am

Your obedient servant,

G. Tunstell,
Acting Chairman.

Calgary, Alberta,
26th June 1951.

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EASTERN ROCKIES FOREST CONSERVATION BOARD

To

The Honourable Nathan E. Tanner,
Minister of Lands and Forests,
EDMONTON, ALBERTA.

Sir:

I have the honour to submit herewith the
Annual Report of the Eastern Rockies Forest Conservation
Board for the fiscal period 1st April 1950 - 31st March 1951,
pursuant to the provisions of the Eastern Rocky Mountain
Forest Conservation Act of 1947. I am

Your obedient servant,

G. Tunstell,
Acting Chairman.

Calgary, Alberta,
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PERSONNEL

Howard Kennedy, C. B. E., M. C., B. Sc. Chairman of
the Board (on leave of absence)

George Tunstell, B. Sc. F. Dominion Member of the Board

H. G. Jensen, LL. B. Alberta Member of the Board

J. D. Middlemass, E. D., B. Sc. Secretary

E. S. Fellows, M. Sc. F. Chief Forester

C. R. Cornish, B. A. Sc., M. E. I. C. Chief Engineer

* * * * *

REPORT OF BOARD MEMBERS

GENERAL The Eastern Rockies Forest Conservation Board was established in 1947 by agreement between the Governments of the Dominion of Canada and the Province of Alberta.

The area over which the Board now has jurisdiction totals 8,606.74 square miles.

Briefly stated, the purpose is to protect and develop these lands with the object of maintaining the most desirable conditions for watershed management in these upper portions of the Saskatchewan River and its tributaries. It is hoped thereby to reduce the peak of flood waters in the spring and maintain the maximum flow during the summer.

The fiscal year of the Board ends on 31st March. This is its fourth annual report and marks the close of the third full year of operation.

The Agreement covers a period of twenty-five years and provides among other things for the expenditure of \$6,300,000.00 voted by the Dominion for capital improvements during the first six years. The 31st March 1951 is the mid-point in this capital period. Reference to the financial statement will show that approximately one-half this sum has been expended to date.

The Agreement also provides for an annual appropriation, not exceeding \$300,000.00 for maintenance and other current expenditures of which the Province contributes

the total revenue derived from surface rights on the area and the Dominion makes up the difference.

ACCOMPLISH-MENTS In the development of plans for the management of this area the Board recognizes water as the most valuable resource. Therefore, all activities must be subservient to good watershed practices.

Unfortunately basic hydrologic data are fragmentary for most of the drainage basins of this area. Some information is available on precipitation, a little on runoff, nothing on replenishment of ground water supplies, and nothing on losses due to evaporation or transpiration. To fill some of these gaps a number of weather stations have been set up throughout the area, a number of stream-gauging stations have been established in co-operation with the Water Resources Division of the Department of Resources and Development, and soil studies are being made which will give some information on the infiltration rate of various soil types under a number of conditions. Fortunately, however, the fundamentals of watershed management are fairly well known and considerable information is available from other areas to serve as a guide even though the conditions are not comparable.

Generally speaking the watershed is in good condition. There are a few areas where erosion is evident but these are distinctly local and remedial measures have already been initiated.

All watershed authorities agree that the prime requisite for good management is a complete vegetative cover. This area has a good cover of either forest or grassland. Anything that destroys this cover, such as fire or over-grazing,

creates conditions favourable for erosion. For this reason the Board is paying particular attention to fire protection and grazing.

Grazing is of considerable importance in the southern portion of the Board's area in the Crowsnest Forest Reserve. In this area soil and range surveys have been undertaken which are supplying the basic data necessary for the development of sound grazing management plans. The number of stock which each management unit can carry without deterioration is carefully determined. Stock entering the area is counted to ensure that this number is not exceeded. Frequent inspections by the ranger staff guard against malpractices.

Fire protection is being improved by the selection of additional look-out points to supplement existing ones and the erection thereon of suitable facilities to detect and report the occurrence of fires and to accommodate the look-out man.

A complete radio communication system is being installed which will link up rangers, patrolmen, look-outs, workmen and other field personnel with the administrative office of the Provincial forest service located in the city of Calgary. This network is of primary benefit to the fire protection organization where elimination of all time delays is a must but it will also be of benefit for many other purposes in the administration of this area.

Perhaps the greatest improvement in fire protection is being made through the construction of a

Trunk road	114 miles
Secondary road	42 miles
Truck trails	91 miles

network of roads which will make all parts of the area readily accessible. This road system may be envisaged in three parts:

- (a) The main or trunk road which starts at Coleman in the Crowsnest Pass and runs in a northerly direction through the Board area. This class of road avoids excessive grades, has a relatively wide crown (18 - 20 feet), substantial bridges and culverts, and a gravelled surface.
- (b) Most of the secondary roads give access to the Board area from the settlement to the East. Some of these connect with the trunk road. Other secondary roads more or less parallel it. This class of road is built to a lower standard. Steeper grades are permissible and the crown is narrower (12 - 14 feet). Some of the bridges and culverts may be constructed from native timber. Secondary roads are gravelled.
- (c) Roads of a third class are being built which are designated truck trails. These are the feeder lines running from the trunk and secondary roads which permit access by truck or jeep to areas which otherwise could be reached only by pack horse or on foot. These roads are of a very low standard and are constructed almost entirely with a bulldozer used by the ranger staff.

The following is a summary of roads completed to the end of March, 1951:-

South of the Bow River

Trunk road	114 miles
Secondary road	42 miles
Truck trails	91 miles

North of the Bow River

Trunk roads	nil
Secondary roads	73 miles
Truck trails	96 miles
Total all classes	416 miles

Although these roads are of primary value for fire protection, they are also useful for many other purposes. They make available the resources of the whole area. This is particularly noticeable with respect to timber. Many millions of feet board measure which were inaccessible a few years ago can now be logged. This is reflected in the increase in the cut of timber. The cut of saw timber for the past three fiscal years is as follows:-

1948-49	23,500,000 f. b. m.
1949-50	31,250,000 f. b. m.
1950-51	33,054,000 f. b. m.

STAFF

The total number of full-time employees on the East Slope area is 96. Of this number 69 are on the payroll of the Province and 27 on that of the Board. There is, in addition, a fluctuating force engaged seasonally at prevailing rates of wages.

FINANCIAL

It has been necessary for the Board to reduce the programme of work envisaged from capital funds due to the general advance in the price of labour and materials. Plans have been modified accordingly. This has meant the abandonment of some

The Chairman, Major-General Howard Kennedy, is on leave of absence to the United Nations Relief and Works Agency for an assignment in the Middle East.

Mr. J. M. Wardle, Director of Engineering and Water Resources Branch, Department of Resources and Development, resigned from the Board due to pressure of his normal departmental duties.

Mr. George Tunstell, Chief of Forest Research, Forestry Branch, Department of Resources and Development, was appointed to the Board.

REVENUE Revenue derived from the area on account of surface rights has increased substantially. The following are comparative figures for the last three fiscal years: -

1948-49	\$ 131,679.39
1949-50	171,354.77
1950-51	237,504.88

This increase in revenue is explained in part by higher rates from grazing and timber. However, much is accounted for by the road-building programme making more timber available with a resultant increase in the cut.

FINANCIAL It has been necessary for the Board to reduce the programme of work envisaged from capital funds due to the general advance in the price of labour and materials. Plans have been modified accordingly. This has meant the abandonment of some

projects which had been tentatively planned and the modification of others in order to assure the completion of those deemed to be most essential.

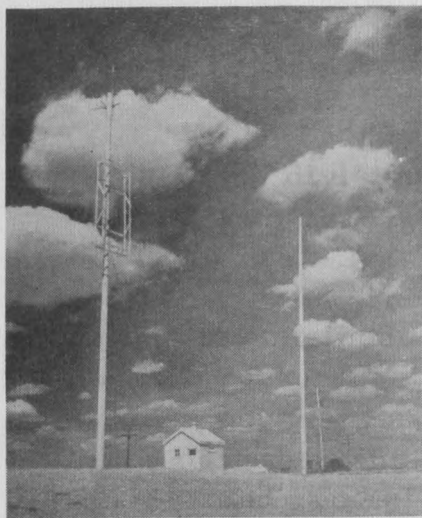
The sum of \$ 300, 000.00 on maintenance account has been sufficient to date but it will be inadequate when improvements now being made from capital funds are completed and are turned over for maintenance and service. These extra charges on the maintenance fund will commence within a year and at the end of the capital period (31st March 1954) this fund must meet all requirements. Costs of goods and services have advanced so much during the past few years that an appreciably larger sum is required to carry out the Board programme and protect the capital investment made in roads, buildings, look-outs and other improvements.

OTHER
REPORTS

Attention is directed to the reports of the Chief Engineer, the Chief Forester and the Secretary which supplement this report of the Board Members.

George Tunstell, Acting Chairman.
H.G. Jensen, Alberta Member.

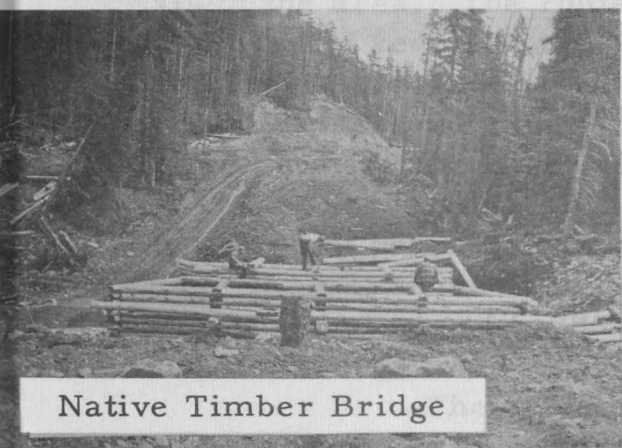
Many forms of construction are being carried out for protection and development of the forest resources.



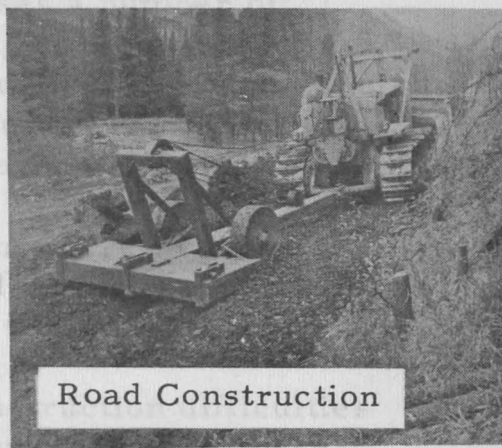
F. M. Radio Station



Forest Ranger's House



Native Timber Bridge



Road Construction



Tree planting on waste space

REPORT OF THE CHIEF ENGINEER

The principal concern of the Board's engineering division to date has been the planning and construction of a network of roads.

The East Slope area lies generally in rugged mountainous terrain. South of the Bow River the high rock range of the Continental Divide forms its western boundary. For the entire length of over 300 miles outlying ranges of the main Rockies cover the western and central portions.

The trunk road was envisaged as a main artery lying closely along the north and south axis of the area. The route crosses a number of summits and requires the bridging of numerous rivers. The highest elevation is reached where the constructed section crosses the divide between the waters of the Kananaskis and the Highwood Rivers. This summit is 7,239 feet above sea level, which is believed to be the highest point reached by a road anywhere in Canada. Other summits have been crossed by the constructed road at elevations of 5,886 and 6,547 feet.

The principal construction difficulties are occasioned by the short working season at these high elevations and the difficulty of access to the work.

The road will go through very attractive and varied country and will open a new and interesting recreational area.

RECON-NAISSANCE SURVEYS As a first step in the planning of the trunk road it was necessary to make route reconnaissance surveys. These exploratory investigations are required to establish the general route through comparatively unknown territory.

Reconnaissance has now been completed from the Crowsnest River to the North Saskatchewan River. This completes necessary reconnaissance for the trunk road as the north and south portions of the area are accessible by existing roads.

During the year under review the area between the Clearwater and North Saskatchewan was investigated. It was established that a feasible route exists through the central part of that district. Major obstacles to construction are bridge crossings of the Clearwater and North Saskatchewan Rivers. Financial restrictions imposed by the declining dollar value have forced abandonment of any idea of bridging the Clearwater. The economic feasibility of a bridge crossing of the North Saskatchewan will be further investigated.

The season's route reconnaissance covered an area roughly 50 miles by 40 miles and travel was by horseback or afoot. The route selected measures approximately 65 miles.

LOCATION SURVEYS Two location survey parties were in the field all season staking final location line for the trunk road. Location was completed south of the Bow River, and also from the Bow River north to the Red Deer River. North of the Red Deer River a location was made well into the James River drainage.

In all a total of 69 miles of location survey was run and marked on the ground. In connection with the location survey some 35 miles of tote road were built which will also serve to open the area for construction.

ROAD CONSTRUCTION To date 114 miles of trunk road have been constructed north from Coleman which lies in the Crowsnest Valley. Of this distance 101 miles were built by contract and the remainder rough graded by day labour crews and completed by contract.

By arrangement with the Provincial Department of Lands and Forests, all contract road work was handled by the engineering staff of the Board. Day labour work was done by the use of rented equipment as required and was under supervision of the Alberta Forest Service. Engineering assistance was provided by the Board's staff wherever required.

In the 1950 season grading of 32 miles of trunk road was done by contract. This work was finished with the exception of some stream crossing structures, where late delivery of material delayed completion. Construction of the gaps is currently under way and gravelling of the section will be undertaken in the 1951 season.

The 44 miles of grade constructed north of Coleman in the previous season were gravelled in 1950 under a separate gravelling contract. Base gravelling was also done by day labour on 30 miles of constructed grade in the Kananaskis and Storm Creek Valleys.

In the early fall of 1950 a contract was let for the erection of a bridge across the Red Deer River. The site is on the trunk road route and the bridge will provide access from the north to the construction proposed for the 1951 season. The structure was approaching completion at the end of the fiscal year.

Contracts have been let for construction of 41 miles of trunk road during the 1951 season. One contract covered construction of six miles in the Kananaskis Valley, which will complete the road south of the Bow River. Another contract covers 35 miles of road to extend the trunk road from the Bow River northwards to the Red Deer River. Both contracts include the erection of necessary bridges and graveling as required.

During the winter of 1950-51 right-of-way clearing was done by day labour on the trunk road route north of the Bow River. Twelve miles of right-of-way were cleared to provide a start for construction work.

A substantial construction programme for secondary roads and truck trails was carried out during the year under supervision of the Alberta Forest Service. A total of 24 miles of secondary road was built and 46 miles were gravelled. Truck trails were also built to a total length of 132 miles.

A brief summary of the work undertaken in the programme outlined above is given in the following paragraphs:-

In the Crowsnest Forest a truck trail was built to connect the two ranger stations of the Porcupine Hills area. A truck trail was built to connect Pekisko Cabin with the Willow Creek Ranger Station.

In the Bow River Forest truck trails were built northwards through the Aura District and up the north fork of the Ghost River. Access roads were built to the Moose Mountain Look-out and to a new look-out site in the Aura District. In conjunction with Calgary Power Limited a truck trail was built along the east side of the new Spray Lakes reservoir. This road will be extended in 1951 to reach the Kananaskis Valley.

A section of secondary road was built along the Red Deer River in the Clearwater Forest. Gravel was applied to the previously built Red Deer and Chungo secondary roads. Truck trail work was done on the Yara Creek, James Cabin, Swan Lake, Holbrook Cabin and Clearwater trails.

BUILDING A number of new buildings were erected
CONSTRUCTION to implement the policy of providing better living quarters for the ranger staff. Extensive alterations were also made to modernize several other buildings.

Very considerable progress was made towards completion of a headquarters establishment at Blairmore for administration of the Crowsnest Forest. The headquarters will consist of an office building, a storehouse and workshop and will be ready for occupation in the early summer.

The building programme has very largely been done by use of ranger labour and was under the supervision of the Forest Service.

WATER STORAGE SURVEYS In the fall of 1950 some field survey work was done to provide information on the topography and stream and soil conditions at several suggested water storage sites. This information will be used in the 1951 season as a basis for a fact-finding survey on water storage possibilities.

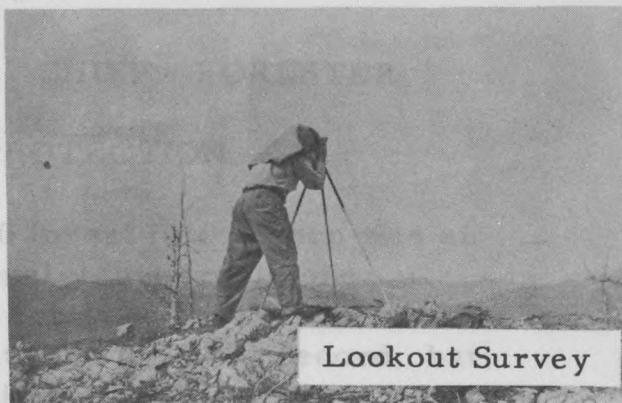
EQUIPMENT A medium sized motor patrol grader was purchased in 1950 and used for gravelling operations and road maintenance. A small patrol grader was purchased near the end of the fiscal year to aid in maintaining the increasing mileage of road in the Board's area.

C. R. Cornish,
Chief Engineer.

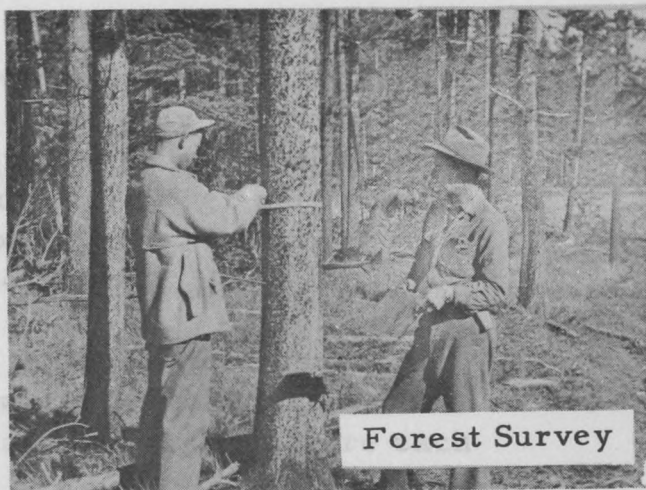
Many kinds of survey are conducted to assess the resources of the forest reserve and to locate roads and other improvements.



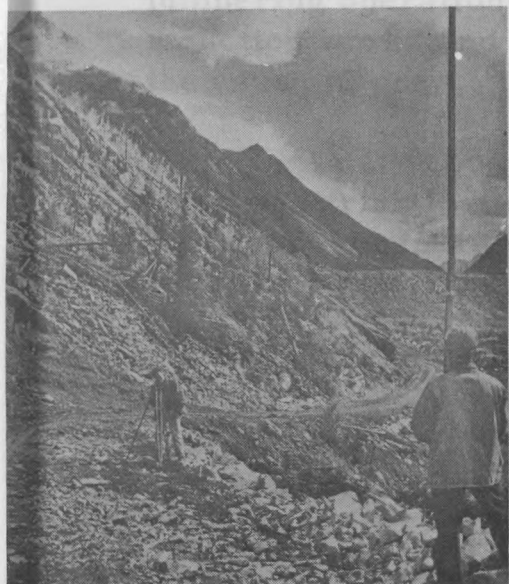
Range Survey



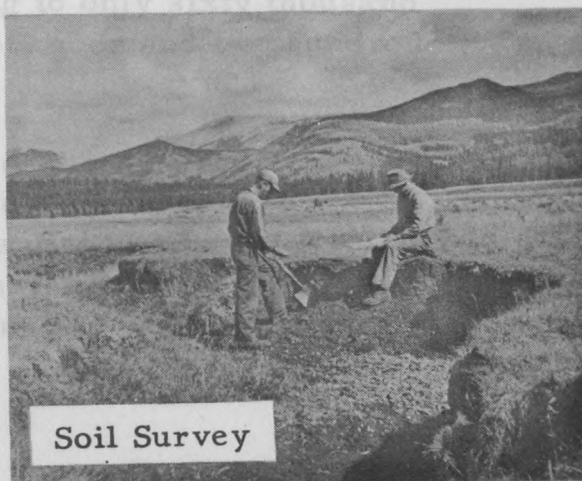
Lookout Survey



Forest Survey



Road Survey
(National Film Board Photo)



Soil Survey

REPORT OF THE CHIEF FORESTER

FOREST PROTECTION

FOREST FIRE The 1950 forest fire season was an
PROTECTION exceptionally favourable one. It must be admitted that weather conditions were a major factor in the good record, but this should not obscure the fact that improved prevention and suppression methods contributed largely to keeping fire losses down to a negligible minimum.

There were five fires reported on the Forest Reserve, of which only one burned an area in excess of one-quarter of an acre; this was extinguished after it had burned over only twenty acres. The total cost of fighting these fires was less than one hundred dollars.

Two of the fires were caused by lumbering operations, while lightning, road construction work, and a careless smoker were each the cause of one.

Loss of timber attributable to these fires was trivial, amounting to only sixty thousand feet board measure of saw-timber and two hundred cords of smaller material.

Personnel of the Alberta Forest Service assigned to the Forest Reserve also assisted in fighting a substantial number of fires outside the area under the Board's jurisdiction. This involved no extra financial outlay on the part of the

Board, but is part of a policy of co-operation under which the organization able to fight a fire with least delay takes the initial action, regardless of whose territory is directly involved.

It was not necessary to close the Forest Reserve to public travel at any time during 1950, but a high fire danger developed late in the autumn and only the providential arrival of snow obviated the need for such action.

DEVELOPMENTS The main advances in the field
IN of fire control were the continued
FIRE CONTROL road-construction programme and the planning and installation of a short-wave frequency-modulation radio network. The former activity is fully covered in the report of the Chief Engineer. The radio project involved chiefly the design and ordering of suitable equipment. A few installations were actually made, but it was not until near the close of the year that equipment of a suitable type in substantial quantities was received. This work continues to be directed by the Superintendent of Radio of the Alberta Department of Lands and Forests.

Investigation of potential look-out sites was continued during the summer of 1950. Approximately thirty such sites were thoroughly investigated on contour maps and the areas visible from them were plotted. The seven sites which were considered the best were then investigated on the ground and panoramic photographs were taken from them. Similar photographs were also taken from two existing look-outs. This makes a total of 43 sites for which panoramic photographs are available since the survey started in 1948. In most cases the final selection of sites must await completion of the entire survey

and a decision as to how many look-outs the Board can afford to maintain, otherwise the best integrated network cannot be devised. There are one or two exceptions, however, where new look-outs will be built regardless of the location of others.

Progress was made in the establishment of weather stations, but long delays in the delivery of equipment prevented the completion of several stations planned for 1950. A start was made on a project designed to correlate phenological conditions with fire danger. This will require further study, however, before any definite results are forthcoming.

PROTECTION AGAINST INSECTS & DISEASE As in previous years, the Board has enjoyed the close co-operation of the Forest Insect Survey of the Federal Department of Agriculture. By means of continual and systematic sampling and inspections the entomologists are in a position to give warning of impending insect outbreaks. It is good to be able to report with confidence that there are no serious outbreaks at the present time. The timber in one or two small areas is known to be attacked by the spruce budworm or the lodgepole pine needle miner, but these danger spots will be kept under observation and no remedial action is called for at the present time. So far as the lodgepole pine needle miner is concerned, the areas affected did not increase in size during the past year and the insect population did not increase.

No large-scale occurrence of disease on the Forest Reserve has been discovered and none is believed to exist.

RANGE MANAGEMENT

GRAZING Grazing permits covering more than 21,000 head of cattle were issued during the 1950 season. Horses and sheep brought the total number of animals allowed on the Forest Reserve to nearly 23,300. This is somewhat less than the previous year. The greatest proportionate decrease was in the case of sheep of which there were less than fifty per cent of the 1949 numbers. The decline in horse and cattle permits was relatively slight. Grazing privileges were granted to 316 permittees, all but two of whom were resident ranchers.

Broadly speaking, the condition of the range was satisfactory, and the cattle left the Reserve in the autumn in better than average condition. The only exceptions were some herds which were not well handled and were allowed to concentrate too much in certain areas. Weather conditions were generally favourable to good growth of grass, but a late spring caused the range to be somewhat below its normal state at the start of the season.

No abnormal losses of animals attributable to predators or other causes were reported.

RANGE The systematic survey of range con-
 CONDITIONS ditions begun in 1949 was carried for-
 ward on an increased scale in 1950.

To date, all significant areas of range land within the Forest Reserve south of the Highwood River have been carefully examined.

The condition of the range so far inspected has varied from "very poor" to "good". Less than one per cent of the area covered, mostly in small localized spots, has been classified as very poor. This condition is almost invariably the result of poor handling of the cattle or the improper location of fences, saltgrounds, or other facilities. The very poor range calls for drastic action, such as complete temporary deferment of use, reseeding, or even the building of check dams and other structural measures for controlling erosion. Some of the worst areas have already been given remedial treatment.

Most of the range falls within the classification "fair" to "good" and is considered satisfactory, provided that improved management methods are used henceforth. Those areas which are classed as poor require a reduction in use to bring about recovery.

Management plans for six grazing divisions have been prepared and are in the hands of the users; others are in preparation. These management plans, together with a programme of closer inspection of the range by forest officers, are confidently expected to result in a significant improvement

in the quality of the range, which will benefit not only watershed conditions - the primary objective of the Board - but also the stock-growers who make use of the Reserve.

In certain parts of the Forest Reserve, significant damage to watershed conditions is being caused by an undesirably large number of wild and stray horses. During the year a programme for substantially reducing the number of such animals was initiated.

Observations made over a period of a year and a half reveal that the elk population is increasing, and in some parts of the Forest Reserve it is in excess of the carrying capacity of the winter range. This has resulted in a noticeable, though localized, deterioration of range and watershed conditions which is being watched with some apprehension by the Board and Provincial game officials. The deer population is not causing any concern to the Board, and summer range for all game animals is abundant.

FOREST OPERATIONS

LOGGING

Fourteen applications for licensed timber berths were considered by the Board and of these all but one were approved. During the year, seven logging operations were completed, leaving 31 timber berths involving green timber in force and active on 31st March 1951.

While the bulk of the timber removed from the Forest Reserve comes from licensed timber berths, there are a number of very small operations conducted under permit. There are also several operations on which only fire-killed timber is removed. These latter are very desirable from the salvage standpoint.

During the fiscal year 1950-51, the total production of lumber originating in the Forest Reserves was just over 33 million feet board measure. This includes both green and fire-killed material, but very little of the latter.

Round timber in the form of poles, posts, mine timbers, etc., was also produced to a total of over two million linear feet. Of this 91 per cent was salvaged, fire-killed timber. Permits for small quantities of fire-wood, fence rails, building logs, etc., were issued, in all cases for local use.

The Board's policy in the matter of allowing the sale of timber remains substantially unchanged. It is considered wise to dispose of mature or over-mature timber before it becomes useless or a menace to the general health of the forest. However, sufficient cover is left to provide satisfactory watershed conditions until a new crop is established. Cutting rights on some eighty million feet board measure of timber were sold in the closing days of the year. This block of timber was sold in a number of

parcels by the Alberta Department of Lands and Forests, but in the aggregate represents the largest sale of timber on the Forest Reserve allowed by the Board to date. It consists chiefly of over-mature spruce. Cutting in this block will be spread over a period of about fifteen years.

OTHER The Spray Lakes hydro-electric develop-
COMMERCIAL ment was again in 1950 the most extensive
ACTIVITIES commercial undertaking on the Forest
 Reserve. By the close of the year, the
 removal of timber to make way for the main storage
 reservoirs, the canal, and head pond was virtually com-
 pleted. In all, more than 3,860 acres of land were
 cleared for these purposes. In addition, there was con-
 siderable clearing for transmission lines. Throughout
 the development the company has kept the clearing ahead
 of the rising water and, although by the end of the year
 the reservoir was approaching full supply level, no timber
 has been submerged. Considering the size of the under-
 taking, the amount of timber removed, and the quantity
 of brush burned, the company has carried out its work
 with a minimum of unnecessary damage. Throughout
 the operations, the company's attitude toward the Board
 has invariably been co-operative, and the Board's
 requirements have been observed in both letter and
 spirit.

Interest in coal-mining and exploration
 for oil continues undiminished. Apart from laying down
 certain conditions necessary to safeguard watershed
 values, the Board has not found it necessary to interfere

with any of these developments. One operation involving strip-mining for coal did cause serious stream pollution in the Crowsnest Pass area during the spring of 1950. This particular mine is so located that pollution is extremely difficult to prevent. However, the company concerned took remedial action when the matter was drawn to its attention, and the situation will be carefully watched in future.

FOREST INVENTORY In conjunction with the range survey, work was continued on a forest inventory. Data were collected on 660 spot samples in various parts of the Crowsnest and Bow River Forests. They represented all the major types of the area covered. At the same time, the Forestry Branch of the Department of Resources and Development continued the work of preparing forest cover maps of a large part of the Forest Reserve from aerial photographs.

These two projects will, in the course of time, provide the basis for an inventory of the timber resources of the area. The field work will supply data on the nature of the timber, site quality, growth characteristics, and other similar factors, while the forest cover maps will delineate the main forest types and lead to the calculation of the total area occupied by each. By combining these two sets of facts, it will be possible to make a reasonable estimate of the quantity and quality of timber in each of the significant timber types on the Forest Reserve. Many more samples must be taken and several more map sheets have to be prepared before sufficient data will be available to justify preliminary estimates.

HYDROLOGY

COLLECTION OF DATA In 1950 the Water Resources Division of the Federal Department of Resources and Development continued its programme of installing automatic stream-flow recording stations on the main rivers leaving or entering the Forest Reserve. Five such stations were installed on the Highwood, Sheep, Mistaya, North Saskatchewan, and Red Deer Rivers. This brings to nine the total thus far established, exclusive of one special installation in Jasper National Park, which is used to measure the discharge of the Sunwapta River rising from the Athabaska Glacier. Next season it is planned to install four more stations and that will probably complete the project.

As explained in the previous report, these stations are built and equipped at the expense of the Board, but the supervision of construction, as well as the maintenance and operation of the stations is a function of the Federal Department of Resources and Development.

As part of a broad study of the hydro-logic characteristics of the region, an investigation of the major soil types was started during the year and will be continued. The main purpose of this study is to determine the percolation rates and water storage capacities of the more important subdivisions of the soil mantle of the region. The possession of such knowledge will be of considerable value in evolving suitable methods of managing the vegetation of the

area with a view to securing the optimum water yield.

The establishment of weather stations, mentioned earlier in this report, is also part of the overall study of the water economy of this important head-water area.

MISCELLANEOUS

For aesthetic reasons, and for its experimental value, a small tree-planting project was carried out at points along the new trunk road in the Crowsnest Forest. With the exception of one small area on which the timber was recently burned, these plantations were not intended to contribute directly to improved watershed conditions. Apart from the fact that they will add to the beauty of the landscape, their main value will be to indicate what success can be expected with artificial planting in similar situations where such action might be desirable from the point of view of watershed management.

During the course of the range survey at present in progress, certain spots have been discovered where quite serious accelerated water erosion is taking place. In the majority of such cases it is believed that nature will heal the damage if management methods are changed. In one instance, however, the damage had gone beyond this stage and corrective treatment was required. This treatment involved contour plowing, the construction of small check dams in the main gullies, the provision of

additional drainage ditches, the re-location of fences to minimize cattle "trailing", and other structural changes designed to check the surface flow of water.

An extensive programme of aerial photography of the Forest Reserve was carried out during the summer of 1950 at the request of the Board, but under the auspices of the Interdepartmental Committee on Air Surveys. This photography was done at an average scale of approximately 1:25000. The completion of this job means that virtually all parts of the Board's area are now covered by aerial photographs of this scale or larger taken within the past seven years. These photographs are of great value to the Board and are used for many purposes.

Some experimental work on stabilizing road cuts and fills was carried out along a five-mile stretch of the new trunk road in the Crowsnest Forest. It involved seeding ditches and gentle slopes to grass, and contour-trenching, wattling, and the planting of juniper, bearberry, and other bushy plants on the larger cuts and fills. The effectiveness of these treatments cannot be fully appraised until next summer.

This Board co-operated with the National Film Board by arranging for the filming of many of the typical activities on the Forest Reserve. It is understood that these "shots" will be incorporated into a documentary film illustrating the aims of the

Eastern Rocky Mountain Forest Conservation Act and what is being done to fulfill those aims.

ADMINISTRATION

There has been no essential change in the relationship between the Board and the personnel of the Alberta Forest Service whose responsibility it is to carry out the Board's policy.

Despite certain changes in the supervisory staff of the Forest Reserve occasioned by retirement and promotion, there has been a steadily increasing mutual appreciation of the problems of policy making and administration on the part of the two groups of officials primarily concerned with these phases of operation. So far as it is within their power to do so, both groups have faithfully carried out the spirit and the letter of the Act under which they function.

E. S. Fellows,
Chief Forester.

REPORT OF THE SECRETARY

The administrative pattern followed during the fiscal period of 1950-51 varied little from that of the previous year. The Minister of Resources and Development in Ottawa and the Minister of Lands and Forests in Edmonton were kept fully informed of activities of the Board and were provided with all reports required under the provisions of the Eastern Rocky Mountain Forest Conservation Act.

MINUTES OF MEETINGS During the year seven meetings of the Board were held, minutes of which were recorded and transmitted to the respective Ministers.

FINANCES As in the previous year, three main accounts continued to be operated, all subject to audit as required by the Act.

The annual maintenance commitment as authorized under the Act is reflected in the Maintenance Administration account covering the costs of maintaining the Board's own services, together with the Maintenance Operating account which reflects the routine operating costs of the Alberta Forest Service, acting as the Board's agents in its area of jurisdiction. Total maintenance disbursements amounted to \$256,847.57 made up of Maintenance Administration costs of \$72,086.47 and Maintenance Operating costs of \$184,761.10.

The Capital account reflected all capital charges incurred by the Board, these being met from funds supplied by the Government of Canada. Capital disbursements for the fiscal period amounted to \$918,404.22, with the

cumulative total for the first three years of the Board's operations amounting to \$2,910,588.33.

The accompanying statement of assets and liabilities, together with the supplementary schedules, reflects the financial operations of the Board during the fiscal period, together with its financial position as at 31st March 1951.

REVENUES Revenue derived by the Alberta Department of Lands and Forests from operations in the Board's zone amounted to \$237,504.88 which was turned over as the contribution of the Government of Alberta to the Maintenance account. Of this amount timber dues contributed \$167,308.01 and grazing \$41,776.33.

A further total of \$40,445.64 was received from the Province of Alberta covering timber berth dues for the fiscal periods 1948-49 and 1949-50.

CURRENT PROGRAMME As required under the Act, estimates were prepared and submitted in November 1950 to the respective Ministers, covering the anticipated outlays by the Board in the fiscal period of 1951-52. These reflected the contemplated expenditures in the capital and maintenance fields deemed desirable by the Board to provide the most effective over-all management of its area, within the limits of the funds made available under the Act. In common with all similar operations, expenses have increased sharply and over-all costs have entailed careful scrutiny during the progress of all phases of the Board's work. To finance this programme the Board has available the sum of \$300,000.00 for Maintenance account and a sum not exceeding \$1,289,411.67 in the

Capital account for the fiscal period 1951-52.

WORKMEN'S COMPENSATION The Board continued to maintain its deposit of \$10,000.00 with the Alberta Workmen's Compensation Board to cover the Board's own employees. As a further safeguard the Board set up a reserve fund to offset the risk of heavy claims in the future. To this reserve fund the sum of \$6,131.85, as determined from the Board's payroll, was deposited. The accident record among the Board's employees continued to be good with claims for the period amounting to only \$63.88 almost wholly for medical attention.

ROUTINE ADMINISTRATION The Board continued to operate a bank account of its own with a regular chartered bank in Calgary and arrangements continued to work well.

The regular quarterly claims for expenditures by the Province of Alberta in the capital and maintenance fields, duly certified and audited, were cleared through the Board's office and forwarded to the Federal Department of Finance for credit and reimbursement, these arrangements being effected promptly.

Relations with officials of the Governments of Canada and Alberta continued to be most cordial. Loyal team work by the office staff throughout the year is gratefully acknowledged.

J. D. Middlemass,
Secretary.

EASTERN ROCKIES FOREST CONSERVATION BOARD

(Established under the Eastern Rocky Mountain Forest Conservation Act, and Operating under Agreement between the Dominion and the Province of Alberta)

Statement of Assets and Liabilities

as at 31st March 1951

Assets

Cash on Hand and in Bank	\$	43,876
Account Receivable - Province of Alberta		57,744
Inventories, at cost:		
Loose tools and small equipment	\$	13,683
Construction materials and supplies		<u>87,473</u>
		101,156
Deposits and Prepaid Expenses:		
Deposits		14,104
Prepaid insurance, etc.		<u>1,199</u>
		15,303
Fixed Assets:		
Capital improvements and works, per Schedule I		2,506,359
Movable equipment, etc., per Schedule IV	\$	419,852
Less: Provision for De- preciation		<u>162,043</u>
		<u>257,809</u>
		2,764,168
		<u><u>2,982,247</u></u>

X

Note: The Schedule to the Act, Section 20, provides that, upon termination of the Agreement with the Province which is for a period of not less than the twenty-five years ended 1973, (a) all improvements or works resulting from the carrying out of the programmes of the Board shall belong to the Province, (b) all other property acquired by the Board shall belong to the Dominion.

Certified Correct

J.D. Middlemass,
Secretary.

Approved on behalf of the Board

G. Tunstell,
Acting Chairman.

Liabilities and Proprietary EquityLiabilities

Government of Canada -

Advances provided under authority of:
Section 8(1) of the Act, for capital
expenditures

\$ 942,718

Less, Disbursements, per Schedule I

918,404

\$ 24,314

Vote 389, contribution towards annual
maintenance expenses

85,515

Less, Disbursements, per Schedule II

17,03968,476

\$ 92,790

Reserved for Claims for Workmen's Compensation

6,132

Reserved for Employees' Retirement Fund

4,104

Deferred Liability, for equipment taken over
from the Province, to be discharged on
termination of the Agreement

26,930129,956

x

Proprietary Equity

Balance at 31st March 1951, per Schedule III

2,852,291

2,982,247

I have examined the accounts of the Eastern Rockies Forest Conservation Board for the year ended 31st March 1951, and have obtained all the information and explanations I have required. In my opinion, the above Statement of Assets and Liabilities is properly drawn up so as to exhibit a true and correct view of the state of the Board's affairs as at 31st March 1951, according to the best of my information and the explanations given to me and as shown by the books of the Board.

Watson Sellar,
Auditor General of Canada.

Statement of Capital Disbursements, from inception to 31st March 1951, from funds provided by the Government of Canada (as authorized under Section 8(1) of the Act), for the location and construction of forest improvements, the making of a forest inventory, re-forestation, and such other works and services as the Board may consider necessary in that area of the East Slope of the Rocky Mountains forming part of the watershed of the Saskatchewan River, as more definitely described in the appendix to the Act. The total expenditure is not to exceed \$6,300,000 during the six years ended 31st March 1954

	<u>1950 - 51</u>	<u>To Date</u>
Improvements and Works:		
New Construction -		
Roads and trails	\$ 795,628	\$ 2,304,925
Buildings	21,073	43,665
	<u>816,701</u>	<u>2,348,590</u>
Additions and Relocations -		
Roads and trails	1,604	53,590
Buildings		4,781
	<u>1,604</u>	<u>58,371</u>
Other Expenses -		
Range and watershed survey	21,111	30,398
Bow trunk location survey	21,795	21,795
Radio network	13,410	13,410
Stream gauging	7,787	12,676
Visibility mapping	2,087	5,668
Boundary survey	364	5,078
Miscellaneous improvements	3,376	3,438
Workmen's compensation, provision for	3,005	3,005
Film production	157	2,465
Radio survey		1,465
	<u>73,092</u>	<u>99,398</u>
Total - Improvements and Works	<u>891,397</u>	<u>2,506,359</u>
Movable Equipment:		
Tractors and heavy equipment	988	130,888
Cars and trucks	12,506	81,989
Forestry equipment	4,549	49,700
Camp and miscellaneous equipment	7,321	23,791
Radio equipment	16,849	21,076
Office furniture and equipment	166	2,569
Livestock	80	80
	<u>42,459</u>	<u>310,093</u>
Additions to (reductions in) Stores and other Inventories:		
Construction materials and supplies	17,837 cr.	87,473
Loose tools and small equipment	2,385	6,663
	<u>15,452 cr.</u>	<u>94,136</u>
Total Disbursements	<u>918,404</u>	<u>2,910,588</u>

Schedule II

Statement of Disbursements for Forest Maintenance, Protection and Management
for the year ended 31st March 1951

	<u>Total</u>	<u>Disbursed by</u>	
		<u>The Board</u>	<u>The Province</u>
Maintenance Expenses:			
Salaries	\$ 191,497	\$ 44,822	\$ 146,675
Automotive expense	16,239	4,126	12,113
Travel	6,868	1,882	4,986
Workmen's compensation	5,308	3,127	2,181
Wages	5,052	1,330	3,722
Rental	4,636	3,600	1,036
Repairs and replacements (other than motor vehicles)	4,245	1,145	3,100
Printing, stationery and office supplies	3,281	2,654	627
Provision for retirement fund	1,772	1,772	
Miscellaneous supplies and expenses	1,507		1,507
Telegrams and telephones	1,365	635	730
Postage and excise	993	262	731
Camp supplies	579		579
Uniforms for forest rangers	479		479
Freight, express and cartage	446	109	337
Other expenses	1,254	658	596
Interest earned on deposit with W.C. Board	65 cr.	65 cr.	
Interest recovered on retirement fund deposit refunded	18 cr.	18 cr.	
	<u>245,438</u>	<u>66,039</u>	<u>179,399</u>
Fixed Assets - Movable Equipment:			
Cars and trucks	7,202	3,480	3,722
Forestry equipment	438	383	55
Camp and miscellaneous equipment	719	712	7
Office furniture and equipment	697	351	346
Engineering equipment	322	322	
	<u>9,378</u>	<u>5,248</u>	<u>4,130</u>
Other Disbursements:			
Increased inventory of loose tools and small equipment	832	630	202
Prepaid expenses	1,199	169	1,030
	<u>2,031</u>	<u>799</u>	<u>1,232</u>
Total Disbursements	<u>256,847</u>	<u>72,086</u>	<u>184,761</u>
Deduct: Portion of advance of \$5,000 made to the Province in 1949-50, now accounted for	<u>2,303</u>	<u>2,303</u>	
Net Disbursements	<u>254,544</u>	<u>69,783</u>	<u>184,761</u>
Contributable by:			
The Province of Alberta - as required by Section 8(b) of the Schedule to the Act, being the amount derived by the Province from the surface rights in the area under jurisdiction of the Board			\$ 237,505
Government of Canada - by Vote 389			<u>17,039</u>
Total			<u>254,544</u>

Notes: Surface rights' revenues of the fiscal years 1948-49 and 1949-50 of \$40,445, not previously reported, were remitted by the Province to the Dominion during the year.

By Section 1(5) of the Schedule to the Act, the remuneration and expenses of the members of the Board are paid by the Government by whom each is respectively appointed; such expenses are, therefore, not included above.

Statement of Proprietary Equity
for the year ended 31st March 1951

Balance as at 1st April 1950		\$ 1,996,577
Increments on Capital Account:		
Disbursements, per Schedule I	\$ 918,404	
Less, Write-offs during the year in respect of items retired, destroyed or lost	<u>780</u>	
		\$ 917,624
Increments on Maintenance Account:		
Disbursements, per Schedule II -		
Movable equipment	9,378	
Other disbursements	<u>2,031</u>	
	11,409	
Less, Write-offs during the year in respect of items retired, destroyed or lost	<u>3,513</u>	
		<u>7,896</u>
		925,520
		2,922,097
Deduct:		
Provision for depreciation of fixed assets, for the year	67,503	
Portion of advance of \$5,000 made to the Province in 1949-50, accounted for per Schedule II	<u>2,303</u>	
		<u>69,806</u>
Balance as at 31st March 1951, transferred to Balance Sheet		2,852,291

Fixed Assets - Movable Equipment
as at 31st March 1951

	Book Value - cost, as at 31st	
	For maintenance purposes	For capital purposes
Movable Equipment -		
Tractors and heavy equipment	\$ 243	\$ 130,888
Cars and trucks	47,640	81,989
Forestry equipment	9,877	49,700
Equipment taken over from the Province		26,660
Camp and miscellaneous equipment	9,242	23,791
Radio equipment		21,076
Office furniture and equipment	6,533	2,569
Engineering equipment	8,977	
Livestock		80
Columbia Ice Fields Gauge House	587	
Totals	83,099	336,753

Notes: ^v Entered at depreciated value as at 1st April 1948.

^{ix} Excess of amount realized over book value of equipment sold.

Schedule IV

March 1951	Provision for Depreciation to 31st March 1951		Depreciated Value
Total	Rate %	Amount	
\$ 131,131	20	\$ 66,232	\$ 64,899
129,629	20	64,749	64,880
59,577	10	12,509	47,068
26,660	nil	II 479	26,181
33,033	10	7,055	25,978
21,076	20	5,906	15,170
9,102	10	2,391	6,711
8,977	10	2,538	6,439
80	10	8	72
<u>587</u>	10	<u>176</u>	<u>411</u>
419,852		162,043	257,809
<u><u> </u></u>		<u><u> </u></u>	<u><u> </u></u>

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